

A10

($P < 0.05$). In addition, patients' race and gender do not affect the medication adherence ($P > 0.10$) and, patients' years of education, BMI and age are positively associated with adherence ($P < 0.05$). **CONCLUSIONS:** In recent years, one out of three people in U.S. had at least one gap in insurance coverage due to job change or temporary unemployment in the United States. Studies focusing on the current insurance status may underestimate the impact of health insurance gaps and the population at risk. The policy debates on health insurance should not only focus on the uninsured but also those affected by intermittent non-coverage. Further research is needed on how insurance instability may affect treatment of other chronic conditions other than hypertension.

CM2

UTILIZATION AND PERSISTENCE OF ALISKIREN IN A REAL-WORLD ENVIRONMENT

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OBJECTIVES: Aliskiren is the first marketed direct renin inhibitor approved for the treatment of hypertension in 2007. Study objectives were to evaluate the utilization and persistence of aliskiren in a real-world setting. **METHODS:** A retrospective cohort analysis was conducted using data from a large US pharmacy benefit manager who administers benefits to 27 million members nationally. Patients 18 years or older with at least two claims for aliskiren within a 12 month period of initiating treatment between April 2007 and October 2007 were included in the analysis. Patients also were required to be continuously enrolled in the same health plan 12 months prior to and 13 months after initiating aliskiren. Persistence on aliskiren, defined as time to discontinuation (i.e., >30 day medication gap), was evaluated using a multivariate Cox proportional hazards model. Co-variables adjusted in the model included age, sex, comorbidities, geographical region, insurance type, copay, prescriber specialty and prior antihypertensive utilization. **RESULTS:** A total of 1329 patients were identified as having received aliskiren. Mean patient age was 63.5 (s.d. = 13) years and 52.3% were female. Most patients receiving aliskiren were not naive to antihypertensive treatment. In the 12 months prior to initiating aliskiren, 90.1% of patients had received at least one other antihypertensive medication, and 57.3% had used 3 or more classes of antihypertensives. Mean persistence on aliskiren was 248 (s.d. = 132) days. Multivariate analysis of persistence on aliskiren suggest that the risk of discontinuing was higher among those with copays $\geq \$50$ relative to copays between \$0 and \$5 (Hazard ratio:1.74, 95% CI: 1.34–2.34). **CONCLUSIONS:** Aliskiren is most used among patients previously treated with other antihypertensives and a lower pharmacy copay was an important factor associated with medication persistence. Additional research is needed to assess clinical implications of persistence.

CM3

THE IMPACT OF MEDICARE PART D ON ELDERLY PATIENTS' COMPLIANCE WITH STATINS

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OBJECTIVES: To investigate the impact of Medicare Part D on elderly patients' compliance with statins. **METHODS:** This is a quasi-experimental study with a pre-test and post-test for a treatment and comparison group. This study used IMS Health's LifeLink longitudinal patient level data. The subjects were elderly patients who filled prescriptions for statins in both January 2005 and January 2006. The subjects who enrolled in Medicare Part D in 2006 served as the treatment group and those who did not enroll served as the comparison group. Compliance was measured by proportion of days covered (PDC) over 11 months in both 2005 (pre-test) and 2006 (post-test). The subjects' baseline characteristics including age, gender, payment type, and patient type (statin naive vs. continuing) were compared by t-test or chi-square test. The difference-in-difference model was used to test whether Medicare Part D has an impact on patients' compliance. **RESULTS:** A total of 473,475 elderly patients filled statin prescriptions in both January 2005 and January 2006. The mean age was 71.6 years with 55.85% female. A majority of the subjects was continuing statin users in 2005 (97.52%) and had pharmacy insurance (97.98%). A total of 201,378 (42.53%) patients enrolled in Medicare Part D in 2006. Female patients (chi-square = 6101.43, $p < 0.0001$) and patients who paid their prescriptions by cash in 2005 (chi-square = 2264.82, $p < 0.0001$) were more likely to enroll Medicare Part D in 2006. The average PDC was 80.33% and 74.40% for Medicare Part D patients and 80.04% and 71.80% for non-Medicare Part D patients in 2005 and 2006, respectively. After controlling baseline characteristics, Medicare Part D patients had 2.31% more PDC than non-Medicare Part D patients ($b = 2.31$, $t = 23.69$, $p < 0.0001$). **CONCLUSIONS:** Medicare Part D has a significant and positive impact on elderly patients' medication compliance. It is important to encourage elderly patients to enroll Medicare Part D.

CM4

NONADHERENCE TO CLINICAL PRACTICE GUIDELINES FOR MULTIPLE DISEASE CONDITIONS IN A CALIFORNIA MEDICAID POPULATION

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OBJECTIVES: To assess quality of care in selected California Medicaid (Medi-Cal) diseases through evaluation of adherence to clinical practice guidelines (CPG) and

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medications. **METHODS:** Eligibility and claims data (2002–2004) were used to identify patients with hyperlipidemia (HYPL), hypertension (HYPT), coronary artery disease (CAD), congestive heart failure (CHF), diabetes (DIAB), or depression (DEP). Adherence was assessed using 2004 data. CPG adherence was based on appropriate medication use and adherence to recommended laboratory tests (HbA1c, LDL-C) and eye examinations for diabetes patients. Nonadherence to medications was based on medication possession ratio < 0.8 . Chi-square tests were conducted to evaluate the association of CPG and medication nonadherence with demographic variables. **RESULTS:** The proportion of patients not using appropriate medications varied by disease (62% DEP, 43% HYPT, 40% HYPL, 31% CAD, 25% for both DIAB and CHF). Approximately 74% of CHF patients were not using any beta blocker (BB). Younger age (< 65 years; $p < 0.01$), Blacks (vs. Whites; $p < 0.0001$), and Medicaid-only patients (vs. Medicare/Medicaid dually eligible; $p < 0.0001$, non significant for BB) were more likely to lack appropriate medications, with the exception of depression, where older patients and whites were more likely without appropriate medications (all $p < 0.0001$). For diabetes patients, 90% lacked HbA1c test, 84% lacked LDL-C test, and 57% were without an eye exam. Older and dually eligible patients were less adherent with these measures (all $p < 0.0001$). Nonadherence with medications was high (84% DEP, 72% CHF, 69% HYPT, 51% CAD, 48% HYPL, 41% DIAB), with younger age ($p < 0.05$), Blacks ($p < 0.0001$), and Medicaid-only patients ($p < 0.0001$, non significant for BB) more likely nonadherent than comparison subgroups. **CONCLUSIONS:** Medi-Cal adherence to CPG and medications varied by condition, but was suboptimal across all diseases. A greater proportion of patients were nonadherent to medication than were not using appropriate medications. Future investigation focused on potential factors influencing medication nonadherence (i.e., poor disease knowledge, cultural beliefs) is recommended. Disease-management programs designed for specific diseases, and addressing patient-related characteristics (age, race) along with alterable factors (eligibility), may be most effective for improving adherence.

PODIUM SESSION III: DIABETES – Outcomes Research & Health Care Policy Studies

DB1

PROJECTED COST-EFFECTIVENESS OF BIPHASIC INSULIN ASPART 30 IN TYPE 2 DIABETES PATIENTS SWITCHED FROM BIPHASIC HUMAN INSULIN IN THE UNITED STATES

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OBJECTIVES: Type 2 diabetes is a chronic illness that affects more than 17 million Americans, leading to early death as well as to reduced quality of life due to complications such as blindness, renal failure etc. This study was undertaken with the aim of estimating cost-effectiveness of the premix analog insulin, biphasic insulin aspart 30 (BIAsp), when switched from biphasic human insulin (BHI). **METHODS:** The well validated CORE Diabetes Model was used to project the clinical outcomes based on short-term data (26 weeks) from a Canadian subset of the IMPROVETM observational study. The cohort ($n = 310$) had a mean age of 64.2 ± 10.96 years and 61.7% are male. In the IMPROVETM study, patients were switched from BHI to BIAsp and the main results included a reduction of HbA1c from $8.42 \pm 1.61\%$ to $7.84 \pm 1.46\%$, an increase in BMI of 0.28 ± 2.33 kg/m² and a reduction in major and minor hypoglycemic events by 75% and 33%, respectively. Total direct medical costs (complications + treatment costs) were projected, using US unit costs, over patient lifetimes, and future costs and clinical benefits discounted at 3% per annum. **RESULTS:** The short-term benefits of switching from BHI to BIAsp are projected to lead to an increase in discounted quality-adjusted life expectancy of 0.276 years (4.289 ± 0.094 versus 4.013 ± 0.098). Increased total lifetime costs/patient is $\$4,936$ ($\$84,776 \pm 2,423$ versus $\$79,840 \pm 2,545$) with BIAsp. Combining costs and clinical outcomes result in an incremental cost-effectiveness ratio of $\$17,859$ per quality-adjusted life year (QALYs) gained. **CONCLUSIONS:** Higher acquisition costs of BIAsp are projected to be partly offset by reduced later diabetes-related complications. The net life time cost increase is greatly justified by improved outcomes. The incremental cost-effectiveness ratio is well within what is normally considered good value for money in the United States.

DB2

ANTI-HYPERTENSIVE DRUG USE AND RISK OF DEMENTIA IN PATIENTS WITH DIABETES MELLITUS (DM)

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OBJECTIVES: Anti-hypertensive therapy (AHT), especially the drug classes acting on Renin-Angiotensin system (RAS) and Calcium Channel Blockers (CCB), is known to delay the onset of dementia. The aim of this study was to determine whether different AHT drug classes are independent risk factors for dementia in DM patients, who are at increased risk of dementia. **METHODS:** For the purpose of this retrospective study, we identified a national cohort of US veterans (age ≥ 65 years) with incident DM between October 1996 and December, 2000 in the VA records or between January, 1999 and December, 2000 in the VA-Medicare merged data. The presence of hypertension (HT) was also assessed within the same period. The period prevalence for each